MEASURING MISSOURI STUDENTS' GROWTH IN ACHIEVEMENT: AN UPDATE ON THE STUDENT GROWTH PILOT PROJECT

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Missouri Department
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Student Growth Pilot Project

- Allows educational community to learn about MAP growth data in safe, low-stakes environment

- Provides TIME to develop the right processes and procedures

- Provides opportunities for collaboration around appropriate data analyses and uses

- Allows practitioners to inform state-level policy decisions

Definition of "Student Growth"

"Student growth" is the change in achievement (as measured by state assessments*) for an individual student between two or more points in time. [US Dept. of Education, as reported in Federal Register, Vol. 74, No. 221, p. 59693]
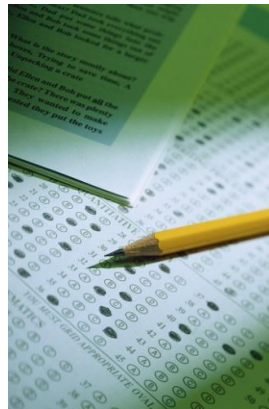
MAP Scale Scores for Individual Students Will be Used to Calculate Growth Estimates

	2006	2007	2008	2009	2010
3	a	x	y	z	m
4	b	a	x	y	z
5	c	b	a	x	y
6	d	c	b	a	x
7	e	d	c	b	a
8	f	e	d	c	b

MAP Communication Arts Scale Score Range (Grades 3-8):   455-875
MAP Mathematics Scale Score Range (Grades 3-8):   450-885

Summary of State-Level Work to Date

- In spring 2010, DESE conducted a statewide conversation about measuring student growth, which resulted in recommendations for implementation of growth models.

- Growth Model Technical Advisory Committee offered valuable recommendations at their September 2010 meeting.

- DESE continues to consider how MAP growth data will be incorporated into MSIP 5th Cycle and into designs for teacher and leader evaluation systems.

- DESE is conducting the Student Growth Pilot Project, with guidance from a statewide Steering Committee and in partnership with participating districts/charter schools and MU faculty members.

What are the purposes for measuring student growth in achievement?

What questions do we need to answer?

Which approach to measurement best fits a question's underlying purpose and ensures utility of results?

Missouri educators suggest the following purposes.

Purposes for Calculating & Reporting Student Growth Data: *District*

- Evaluate curriculum and instruction (use feedback to increase effectiveness)
- Evaluate programs/services (e.g., Title I, ELL, RtI)
- Determine if resource investments are resulting in student success (opportunity cost)
- Identify high-growth districts and help other districts replicate their strategies
- Inform decisions about educator effectiveness
- Inform accountability decisions

# Purposes for Calculating & Reporting Student Growth Data: *State*

- Provide more meaningful data (in comparison to status and improvement scores) to support local decision-making
- Inform state-level accountability decisions
- Inform the design of systems for evaluating teachers and leaders
- Inform the process of evaluating educator-preparation programs

All high-stakes decisions should be made using multiple sources of information!
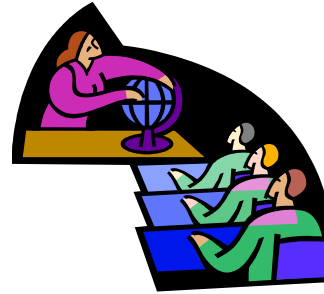
MAP growth data would be one of a number of indicators used to evaluate students, teachers, and leaders and to inform accountability decisions pertaining to programs, buildings, districts, educator-preparation programs, etc.

Accountability Models

◘ *Status*: **Yields snapshot of group's performance at one point in time**

◘ *Improvement*: **Measures change in performance of different groups of students over time**

◘ *Cohort Progress*: **Measures change in performance of same cohort of students over time**

◘ *Growth Analyses*: **Measure progress of individual students from year to year**

- **Gain Scores**
  - **Missouri's Current Method**
- **Cross-Tabulation**
  - **Value Tables**
- **Regression-Based**
  - **Growth-Curve Analyses**
  - **Fixed/Mixed Effects Models (Value-Added)**
  - **Growth Norms (Student Growth Percentiles)**

Regression-Based Approaches to Measuring Student Growth

Value-Added Models

□ **Results of longitudinal data analysis are used to make causal attributions about responsibility for outcomes.**

□ **Start with focus on who/what is accountable for growth**

Student Growth Percentiles

□ **Results of longitudinal data analysis are used to provide descriptive data that can be used for multiple purposes.**

□ **Start with focus on description of growth**

Pilot Project Objectives

- Field test processes associated with calculation and reporting of data and evaluate technical characteristics of data

- Determine best ways to support educators' interpretations and use of data

- Investigate impact of data on educators' attitudes and practices

- Develop policies and practices that place data within larger context of school improvement

Pilot Project Participants

146 School Districts

11 Charter Schools

900+ Educators Participated in Orientation Meetings

Advisory Committee, Steering Committee, MU OSEDA, MU Dept of Economics are key players!

Our growth-data experts say . . .

Damian Betebenner says . . .

- Growth data provide measures of learning as a process; status data provide measures of learning as a destination.

- Different growth-analysis techniques are good at answering different questions.

- Different questions lead to different conversations, which lead to different uses and outcomes.   We want to expand the conversations we have about student learning.

- Student Growth Percentiles describe growth (for students and groups) and support richer, more productive conversations about learning and teaching.

Robert Lee says . . .

- MA DESE reports Student Growth Percentiles because
  - SGPs provide info about high-achieving students and schools.
  - All students at all performance levels are measured in same way and on same scale.
  - SGPs offer utility at student, class, grade, school, district levels.
  - Educators understand SGPs and regard them as fair.
- Academic growth varies by grade, just as weight and height vary by age and gender.
- There is a much lower relationship between growth and poverty than between status and poverty.
- We should maintain a focus on improving instruction.

Doug Harris says . . .

- Hold people accountable for what they can control.

- Value-added data can be used to determine "effectiveness," but there are challenges with this application.

- Teacher/leader whose students make greater than average growth (average = zero) are "high value-added" (i.e., effective).

- Value-added models attempt to control for student and school characteristics.

- We should follow his guidelines for calculating, reporting, and using value-added measures!

Jeff Klein & Mike Kimbrel say . . .

- Growth data has provided PHSD with better answers to the questions district educators have been asked for many years.

- SGPs have been used for program evaluation and subgroup analysis.

- Value-added measures are being used to evaluate effectiveness but in low-stakes way.

- Growth data have utility but are not perfect!

Pilot Project schedule is subject to change! As of today, here is the plan . . .

	VAM	SGP	Year
Student	Not Reported	Range = 1 to 99 State Mdn = 50	Sept. 2011 (thru MAP 2011)
Teacher/ Grade/ Classroom	Range = -3 to +3 Ref Group Mean = 0	Range = 1 to 99 State Mdn = 50	Spring/Summer 2012 (thru MAP 2011)
Building	Range = -3 to +3 Ref Group Mean = 0	Range = 1 to 99 State Mdn = 50	Sept. 2011 (thru MAP 2011)
District	Range = -3 to +3 Ref Group Mean = 0	Range = 1 to 99 State Mdn = 50	Aug.-Sept. 2011 (thru MAP 2011)

As of: 8/1/11

Time Line for Aug-Sept 2011 Release

- August 8: Draft Preliminary APR Posted (w/Growth Data) for Pilot Project Participants

- August 9: Webinars Explaining APR Growth Data

- August 10: Pilot Participants' Decisions About Inclusion of Growth Data Are Due

- August 15: Preliminary APRs Published; Growth Data Shown on Pilot Participants' APRs w/Permission

- Mid-September: Release of Detailed District Data, Building Data, Student Data (SGPs) ALONG W/ WEBINARS!

- Mid- to-Late September-October: Growth Data Work Sessions

Excerpt of DRAFT of Preliminary APR Supporting-Data Table

District: xxxxxx	MAP Value-Added Measures	MAP Student Growth Percentile 5-Year Medians	Growth Points
MATH			
Grade Span 3-5	X (LBCI to UBCI) Met OR Not	Y (LBCI to UBCI) Met OR Not	Yes OR No
Grade Span 6-8	X (LBCI to UBCI) Met OR Not	Y (LBCI to UBCI) Met OR Not	Yes OR No
All Grades 3-8*	X (LBCI to UBCI) Met OR Not	Y (LBCI to UBCI) Met OR Not	Yes OR No*
COMM. ARTS			
Grade Span 3-5	X (LBCI to UBCI) Met OR Not	Y (LBCI to UBCI) Met OR Not	Yes OR No
Grade Span 6-8	X (LBCI to UBCI) Met OR Not	Y (LBCI to UBCI) Met OR Not	Yes OR No
All Grades 3-8*	X (LBCI to UBCI) Met OR Not	Y (LBCI to UBCI) Met OR Not	Yes OR No*

Range of X (VAMs) = -3 to +3; Ref. Group Mean = 0; SD = 1
Range of Y (SGPs) = 1 to 99; State Median = 50
* Must "Meet" in Both Comm. Arts AND Math to Earn Bonus Point

Report Formats: Sept. 2011 Release

- VAM and SGP data (along with other pertinent data) for students (SGP only), buildings, and districts can be downloaded in EXCEL.

- VAM data for buildings and districts will also be presented in graphic format (examples not yet ready).

- SGP data for students and buildings will also be presented in graphic format; examples are forthcoming.

Our recent history….

Park Hill School District

Building Successful Futures • Each Student • Every Day

☐ Analyzing student achievement using student growth percentiles and value-added measures
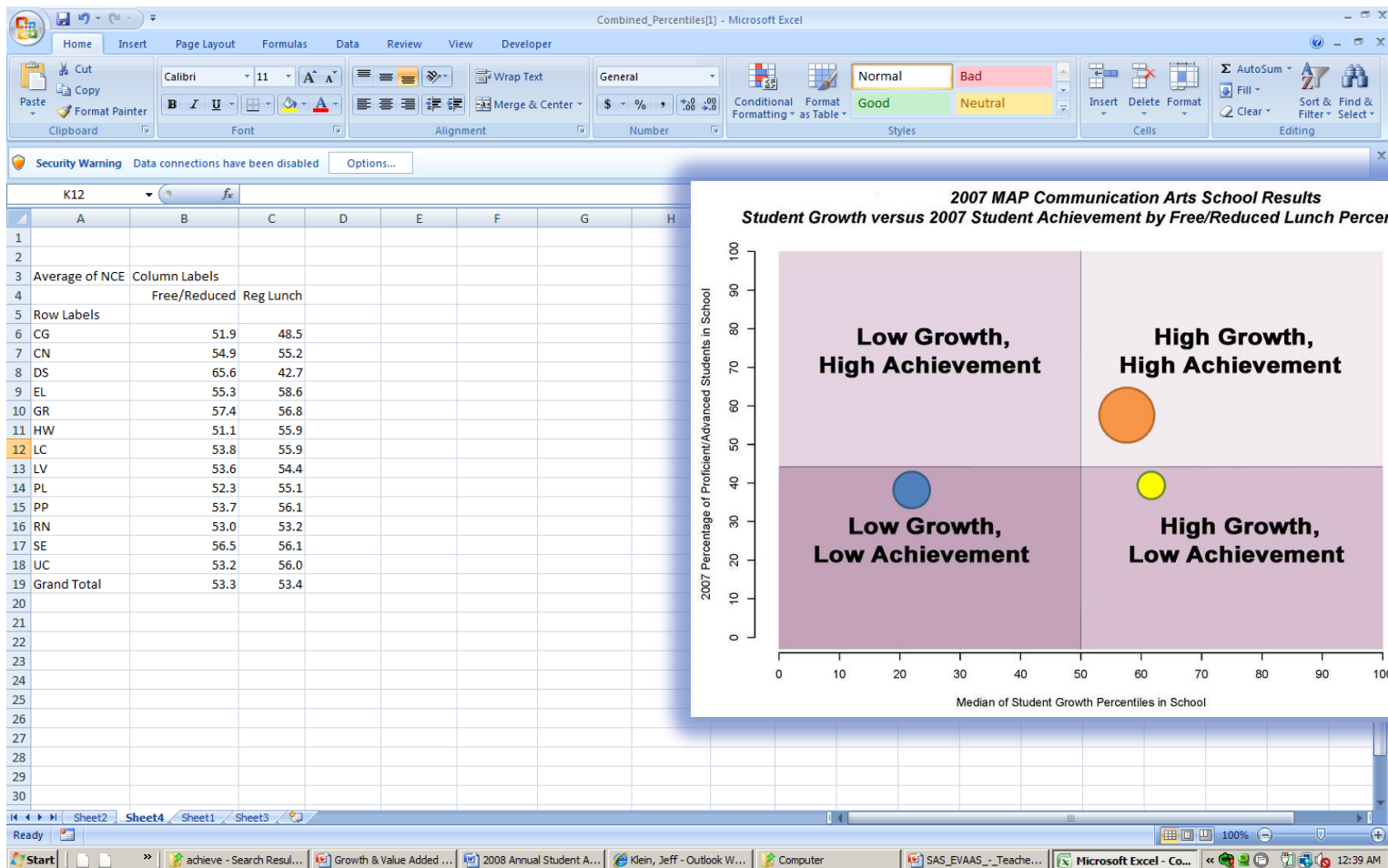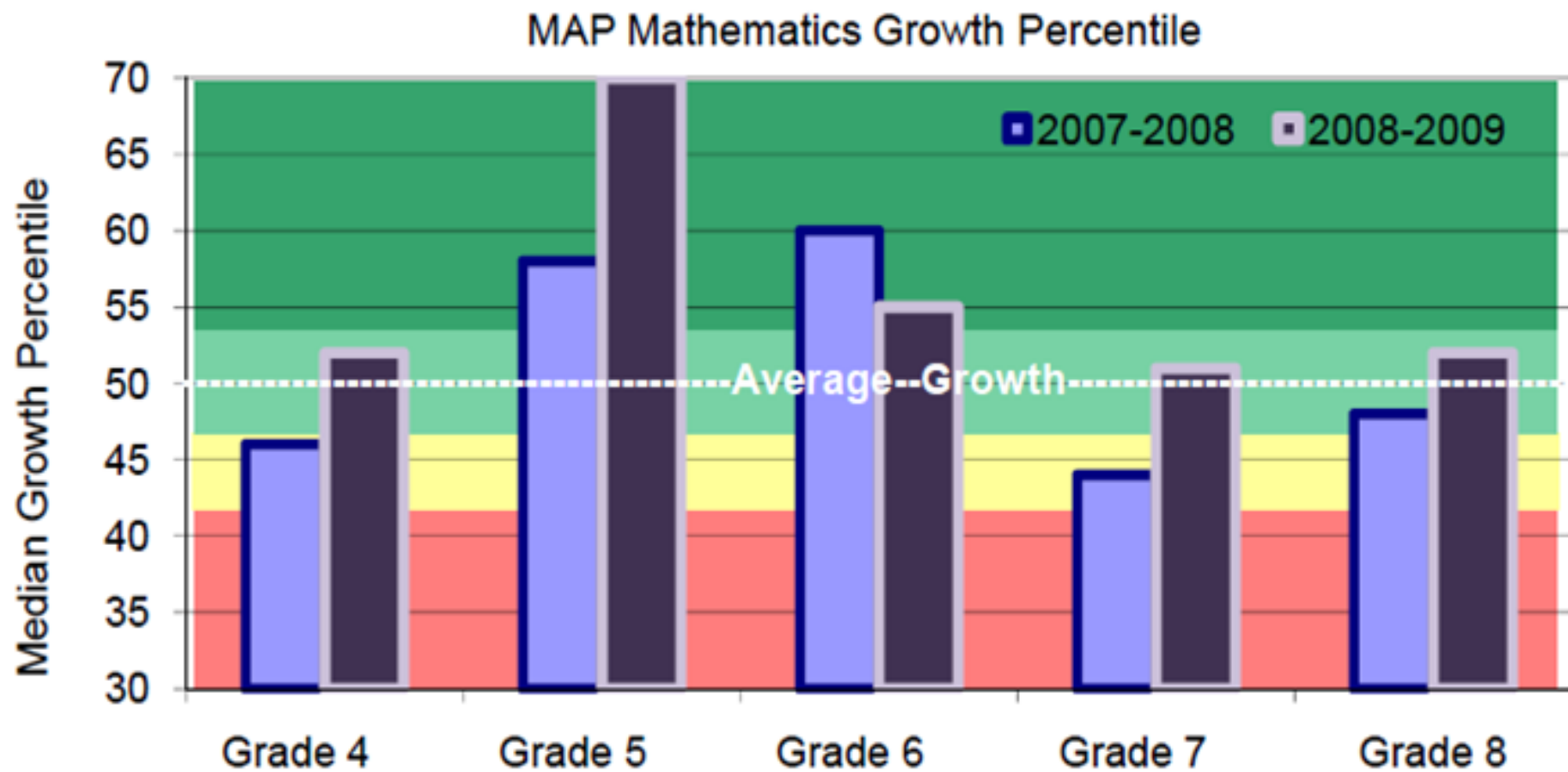
Growth Percentiles

- Started in 2008
  - Produced by OSEDA
  - Growth per student

- Used for:
  - Program evaluation
  - Subgroup analysis

Growth Percentiles

MAP Mathematics Growth Percentile

Value-Added

- Started in 2009
  - Slow, cautious implementation
  - Use of data was optional
  - Training provided for administrators
  - Added to Balanced Scorecard

What we're doing today

- **Entering 3rd year of Value-Added Reporting**

    - **District**

    - **Building**

    - **Grade Level**

    - **Teacher**

- **Process**

    - **Performance Improvement**

    - **District level analysis**

    - **Building Principals use with teachers**

2010 District Value Added Report

Park Hill School District

MAP GLA Math

Estimated District Mean NCE Gain							
Grade:	3	4	5	6	7	8	**Mean NCE Gain over Grades Relative to Growth Standard**
Growth Standard:	0.0	0.0	0.0	0.0	0.0	0.0	
2008 Mean NCE Gain:							
Std Error:							
2009 Mean NCE Gain:		0.1 Y	6.1 G	-1.2 R*	-0.2 Y	1.6 G	1.3
Std Error:		0.5	0.4	0.4	0.4	0.4	0.2
2010 Mean NCE Gain:		4.2 G	9.9 G	0.7 G	3.3 G	2.6 G	4.2
Std Error:		0.5	0.4	0.4	0.4	0.4	0.2
3-Yr-Avg NCE Gain:							
Std Error:							
Estimated District Mean NCE Scores							
Grade:	3	4	5	6	7	8	
State Base Year (2008):	50.0	50.0	50.0	50.0	50.0	50.0	
2007 Mean:							
2008 Mean:	52.6	51.5	57.0	56.6	55.1	53.6	
2009 Mean:	54.7	52.7	57.5	55.8	56.3	56.7	
2010 Mean:	55.6	59.0	62.6	58.3	59.1	58.9	

G - Estimated mean NCE gain is above the growth standard by 1 standard error or more.

Y - Estimated mean NCE gain is at most 1 standard error below the growth standard but less than 1 standard error above it.

R* - Estimated mean NCE gain is below the growth standard by more than 1 standard error.

2009 Value Added Summary Report for
# Park Hill School District
MAP GLA Communication Arts

School Name		4	5	6	7	8
_____ Elementary	2009	0.9	5.4	--	--	--
_____ Middle School	2009	--	--	--	-1.2	0.2
_____ Elementary	2009	2.1	0.1	--	--	--
_____ Elementary	2009	2.3	1.9	--	--	--
_____ Elementary	2009	5.8	-0.5	--	--	--
_____ Middle School	2009	--	--	--	1.6	1.7
_____ Elementary	2009	5.2	-2.5	--	--	--
_____ Middle School	2009	--	--	2.2	--	--
_____ Elementary	2009	-1.0	2.0	--	--	--
_____ Elementary	2009	1.3	0.9	--	--	--
_____ Elementary	2009	2.2	5.3	--	--	--
_____ Elementary	2009	3.7	1.0	--	--	--

Estimated mean NCE gain is above the Growth Standard by 1 Standard Error or more.

Estimated mean NCE gain is at most 1 Standard Error below the Growth Standard but less than 1 Standard Error above it.

Estimated mean NCE gain is below the Growth Standard by more than 1 Standard Error.

-- The school does not have data for this test and subject in the most recent year.

2010 District Diagnostic Report

Park Hill School District

6th Grade MAP GLA Math

Legend: ■ 2010 Gain ■ Previous Cohort(s) — Reference Line — Standard Error
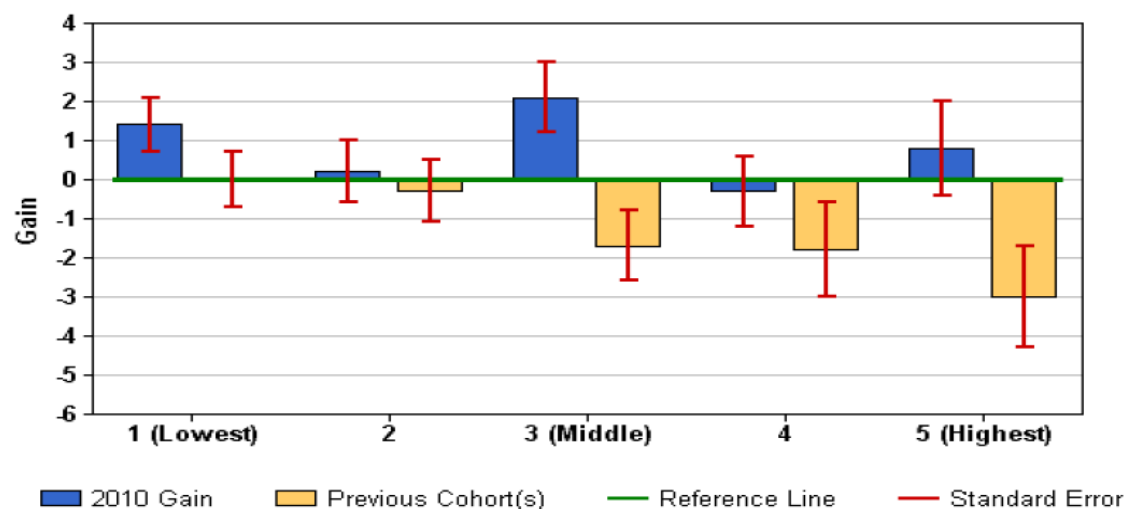
			Prior-Achievement Subgroups				
			1 (Lowest)	2	3 (Middle)	4	5 (Highest)
Math	Reference Line		0.0	0.0	0.0	0.0	0.0
	2010	Gain	1.4	0.2	2.1	-0.3	0.8
		Std Err	0.7	0.8	0.9	0.9	1.2
		Nr of Students	143	131	124	150	138
		% of Students	20.8	19.1	18.1	21.9	20.1
	Previous Cohort(s)	Gain	0.0	-0.3	-1.7	-1.8	-3.0
		Std Err	0.7	0.8	0.9	1.2	1.3
		Nr of Students	129	141	148	123	132
		% of Students	19.2	21.0	22.0	18.3	19.6

Value-Added Assessment Results

□ Used for:

- Evaluating district effectiveness
- Evaluating school effectiveness
- Evaluating grade level effectiveness
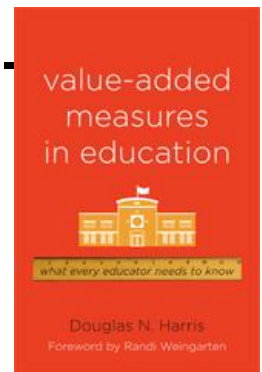- Evaluating teacher effectiveness

Doug Harris' Recommendations for Using VAM

Use value-added to **<u>measure school performance</u>** and hold schools accountable

Consider **<u>extending value-added</u>** to other grades, subjects, and student outcomes.

Avoid the "air bag" problem. Don't drive value-added measures "too fast."

value-added
measures
in education

what every educator needs to know

Douglas N. Harris
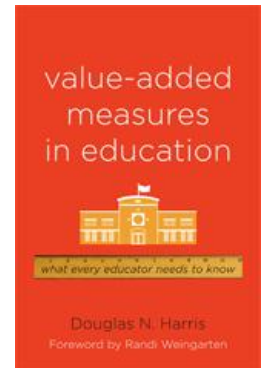Foreword by Randi Weingarten

Doug Harris' Recommendations for Creating and Reporting VA Measures

Include all students, including special education students, English Language Learners, and students with some missing data.

Adjust for sampling error.

Report confidence intervals.

value-added
measures
in education

what every educator needs to know

Douglas N. Harris
Foreword by Randi Weingarten

Benefits of Growth/VA Models

- ☐ More accurate data

- ☐ More accurate inferences

- ☐ Better decisions

- ☐ Cultural shift toward growth

- ☐ Challenges traditional beliefs about effectiveness
  - ☐ Good school/bad school
  - ☐ Achievement gap

What questions/concerns do you have?

For more information (& our PPPs):

www.dese.mo.gov/MOSIS/MCDS_pilot-student-growth.html

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